

**ABSTRACT**

A Fischer-Tropsch C<sub>3</sub>-C<sub>4</sub> olefin stream is simultaneously dehydrated and isomerized to convert alcohols to olefins and 1-butenes to 2-butenes and thereby lower the oxygenate content. Another Fischer-Tropsch fraction is hydrotreated and hydrocracked to provide an isobutane stream. The treated C<sub>3</sub>-C<sub>4</sub> olefin stream having an oxygenate content less than 4000 ppm, is reacted with the isobutane stream to provide a highly branched, high octane isoparaaffinic alkylate. The alkylate is useful as a blending component in motor gasoline.

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